

DETAILED ACTION

This is to acknowledge the receipt of "applicant argument/remarks" filed on 3/13/2008. Claims 1-10 are pending in application.

Status of the Precious Rejection

The previous rejection for claims 1 and 6 under 35 U.S.C. 103(a) as being unpatentable over Yiu Chen et al (NPL: "Study on microstructure and properties of softnitriding layer in the several steels", Tianjin Metallurgy, Tianjin Inst. Of Technology; No.4: 2000; pages 9-12, thereafter NPL-1) is maintained.

The previous rejection for claim 5 under 35 U.S.C. 103(a) as being unpatentable over NPL-1 as evidenced by Ishida et al (US 6,599,469, thereafter US'469) is maintained.

The previous rejection for claims 2-4, 7-10 under 35 U.S.C. 103(a) as being unpatentable NPL-1 and in view of Ishida et al (US 6,599,469, thereafter US'469) is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yiu Chen et al (NPL: "Study on microstructure and properties of softnitriding layer in the several steels", Tianjin Metallurgy, Tianjin Inst. Of Technology; No.4: 2000; pages 9-12, thereafter NPL-1).

NPL-1 is applied to the claims 1 and 6, for the same reason as stated in the previous rejection dated 11/13/2007.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over NPL-1 as evidenced by Ishida et al (US 6,599,469, thereafter US'469).

NPL-1 as evidenced by US'469 is applied to the claim 5, for the same reason as stated in the previous rejection dated 11/13/2007.

Claims 2-4, 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over NPL-1 and in view of I US'469.

NPL-1 in view of US'469 is applied to the claims 2-4, and 7-10, for the same reason as stated in the previous rejection dated 11/13/2007.

Response to Arguments

Applicant's arguments filed 3/13/2008 have been fully considered but they are not persuasive.

In the remark, applicant argues:

1) regarding the rejection for claims 1 and 6, the office action asserts that the result-effective variable is the alloy composition and the parameters of surface nitriding treatment, and that the result sought is Vickers hardness of surface portion and distribution of hardness along depth profile (Office Action, page 2, lines 14-16).

However, this recitation is taken directly from applicants' disclosure. Furthermore, Chen (NPL-1) merely teaches that "better" hardness and no teaching of an increase in the surface-hardness and an increase in the bend straightening property of the alloys.

2) regarding claims 2-5 and 7-10, Ishida (US'469) does not teach providing both hardness of the steel and bend straitening properties. Ishida (US'469) fail to disclose or suggest a Cr equivalent value as defined in claim 2 of 0.72% or more and 1.0% or less.

In response:

Regarding the argument 1, the Examiner disagrees the Applicants' argument. First, none of the claims claims increasing the "both the surface hardness and the bend straightening property" in the instant claims as asserted. Second, as pointed out in the previous office action marked 11/13/2007, NPL-1 discloses the hardness distribution curve of different steels after softnitriding treatment (Refer to the Fig.2 of NPL-1), which provides a good evidence to support the "result-effective variables" discussion in the previous rejection. The Examiner notices the data of hardness distribution curve in Fig.2 and table 2 of NPL-1 overlapping the claimed hardness distribution in the instant claims.

Regarding the argument 2, first, none of the claims claims increasing the “both the surface hardness and the bend straightening property” in the instant claims as asserted. Second, as pointed out in the previous office action marked 11/13/2007, the composition ranges taught in US’469 overlap the claimed ranges (refer to the comparing composition table in the previous office action marked 11/13/2007), which is a prima facie case of obviousness. SEE MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to select the claimed compositions C, Si, Mn, Cu, Ni, Cr, Al, N, and to add one or more from Pb, S, Ca, Bi, Ti from the composition disclosed by US’469 in the process of NPL-1, because US’469 discloses the same utility throughout the disclosed ranges. The examiner notices if pick the upper limit from the ranges of C, Si, Mn, and Cr in composition ranges of the US’469’s alloy, the Cr[eq.] will be 0.89% which is within the 0.72 to 1.0% range as recited in the instant claim 2. Therefore claims 2-5 and 7-10 are unpatentable over NPL-1 in view of US’469.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-270-1884. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY
/Roy King/
Supervisory Patent Examiner, Art Unit 1793